

- reacting microparticles coated with a bioaffinity reactant A which specifically binds [an] at least one analyte to be assayed, a sample to be analyzed, and a labelled bioaffinity reactant B to cause said analyte and said labelled bioaffinity reactant B to specifically bind to said microparticles via the bioaffinity reactant A; and

- measuring signal strength from labelled bioaffinity reactant B bound to the microparticles to determine the analyte concentration in the sample, the improvement comprising:

- contacting a predetermined amount of said sample, a predetermined number of uniformly sized microparticles coated with said bioaffinity reactant A and said labelled bioaffinity reactant B labelled with a luminescent label such that, after the specific binding of the analyte in the sample to said predetermined number of uniformly sized microparticles, each individual microparticle emits a signal strength that corresponds to the analyte concentration in the sample , and

- [determining the analyte concentration in said sample by] measuring the signal strength from an individual [microparticles] microparticle using a measuring means capable of reading the luminescence from an individual microparticle [single microparticles, the number of individual microparticles measured being the minimum number that will provide a statistically reliable measurement of the signal strength], and determining the analyte

D1  
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concentration in the sample by comparing said signal strength 26  
measured from said individual microparticle with a standardization 27  
curve, wherein said standardization curve is a mean of the signal 28  
strength of said predetermined number of uniformly sized 29  
microparticles. 30

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D2  
16. (Amended) The assay method according to claim 13,  
wherein the assay comprises a competitive immunoassay, in which the  
labelled bioaffinity reactant B [is] comprises an antigen, and the  
bioaffinity reactant A [comprises] is an antibody for whose binding  
sites the labelled antigen and [an antigen of] the analyte compete.

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D3  
6. (Twice Amended) The assay method according to claim 13,  
wherein the assay comprises a non-competitive immunoassay, in which  
the labelled bioaffinity reactant B [is] comprises an antibody  
[directed against an antigen of] which specifically binds to the  
analyte.

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7. (Twice Amended) The assay method according to claim 13,  
wherein the assay comprises a nucleic acid hybridization assay, in  
which the labelled bioaffinity reactant B [is] comprises a nucleic  
acid probe which specifically hybridizes with the analyte.

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Cancel claims 14, 15 and 8. NG